Cloud Computing

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AGENDA:

- Definition
- Structure
- Characteristics
- Challenges
- Evolution
- Types
- Benefits

CLIENTS' TYPE:

- Mobile
- Thick
- Thin

CHARACTERISTICS OF CLOUD COMPUTING

1. On-demand Usage (you take when you need).
2. Ubiquitous Access (any device can access it).
3. Multi-tenancy (more than one user can access it).
4. Elasticity (you can adjust your hardware configuration as needed)
5. Measured Usage (pay for your usage).
6. Resiliency (redundant data)

1- ON-DEMAND USAGE

- A cloud consumer can unilaterally access cloud based IT resources giving the cloud consumer the freedom to **self-provision** these IT resources.

- Once configured, usage of the self-provisioned IT resources can be automated, requiring no further human involvement by the cloud consumer or cloud provider.

- This results in an on-demand usage environment.

2- UBIQUITOUS ACCESS

- Ubiquitous access represents the ability for a cloud to be widely accessible.
- Establishing ubiquitous access for a cloud service can require support for a range of transport protocols, interfaces and security technologies.
- To enable this level of access generally requires that the cloud service be tailored to particular needs of different cloud service consumers.

3- MULTI-TENANCY

- Multi-tenancy is a characteristics of a software program that enables an instance of the program to serve different consumers (tenants), each of which is isolated from the others.

- A cloud provider pools its IT resources to serve multiple cloud service consumers by using the multi-tenancy model.

- Through the use of multi-tenancy technology, IT resources can be dynamically assigned and reassigned, according to cloud service consumer demands

4- ELASTICITY

- Elasticity, within the context of cloud computing, is the ability of a cloud to enable cloud consumers to scale cloud-based IT resources out or in, as required.

- Elasticity is often considered **a core justification** for the adoption of cloud computing, primarily due to the fact that it is closely associated with the Reduced Investment and Proportional Costs benefit.

- Cloud providers with vast resources can offer the greatest range of elasticity.

5- MEASURED USAGE

- Measured usage represents the ability of a cloud platform to keep track of the usage of its IT resources by cloud consumers.

- Based on what is measured, the cloud consumer is charged only for the IT resources actually used and/or for the time-frame where access to the IT resources was required.

5- MEASURED USAGE (CONT.)

- Measured usage is not limited to tracking statistics for billing purposes. It also encompassed the general monitoring of IT resources and related usage reporting (to both cloud provider and cloud consumers) .

- Therefore, measured usage is also relevant to clouds that do not charge for usage (which may be applicable to the private cloud deployment model described in the Cloud Deployment Models section).

6- RESILIENCY

- Resilient computing is a form of failover that distributes redundant implementations of IT resources across physical locations.
- IT resources can be pre-configured so that if one becomes deficient, processing is automatically hand over to another redundant IT resource.
- Within cloud computing, resiliency can refer to redundant IT resources within the same cloud (but in different physical location) or across multiple clouds.
- Cloud consumers can increase the reliability and availability of their applications by leveraging the resiliency of cloud-based IT resources.

WHAT IS CLOUD COMPUTING

EVOLUTION OF CLOUD COMPUTING

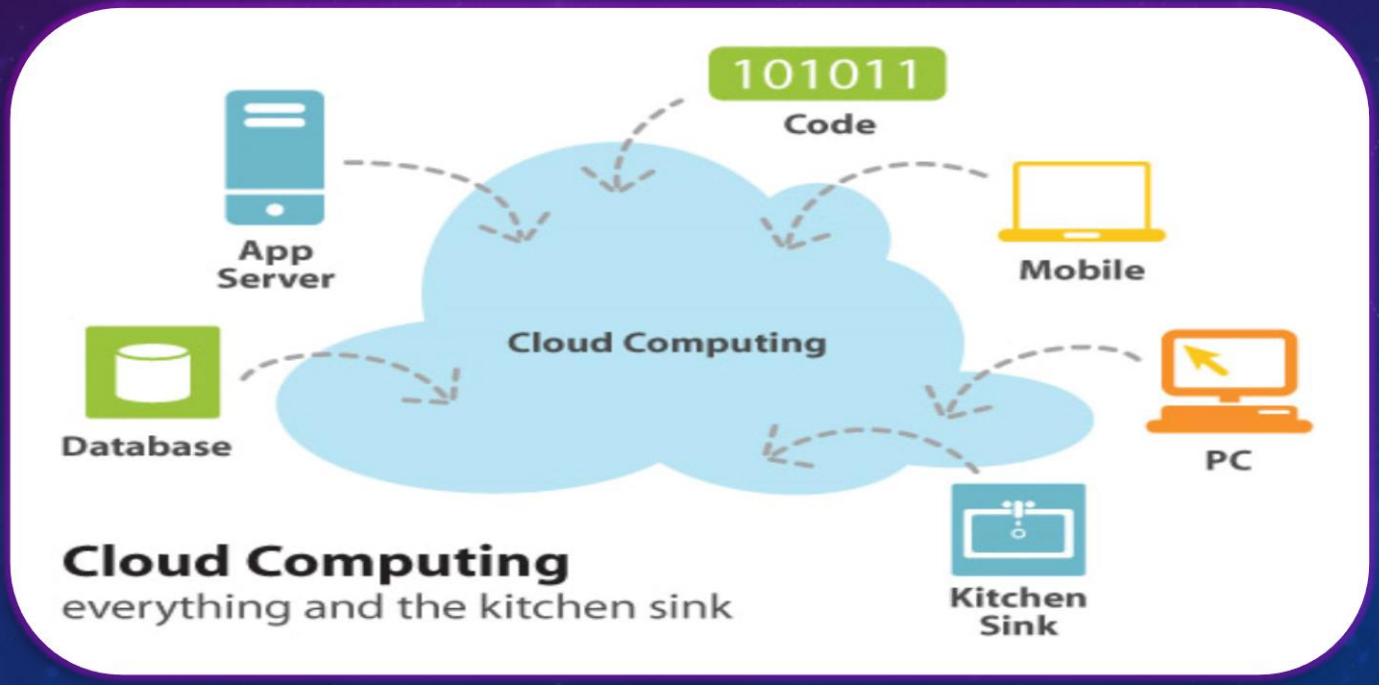
- Grid computing
- Cloud computing

GRID COMPUTING:

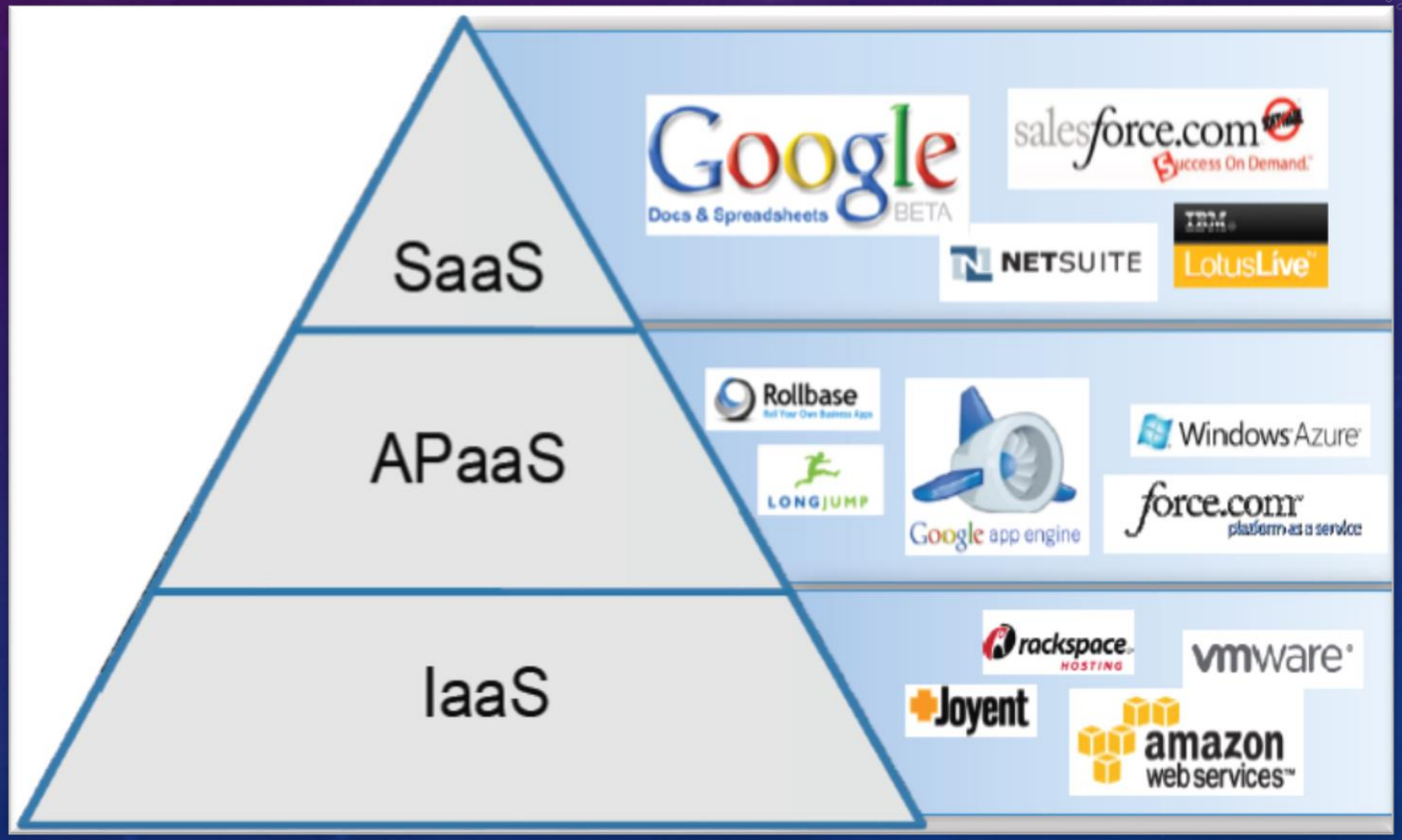
- Consist of one main computer.
- Distributes information and tasks to a group of networked computers to accomplish a common goal.

Cloud computing:

- Cloud computing is a technology that uses the internet and central remote service to maintain data and application.



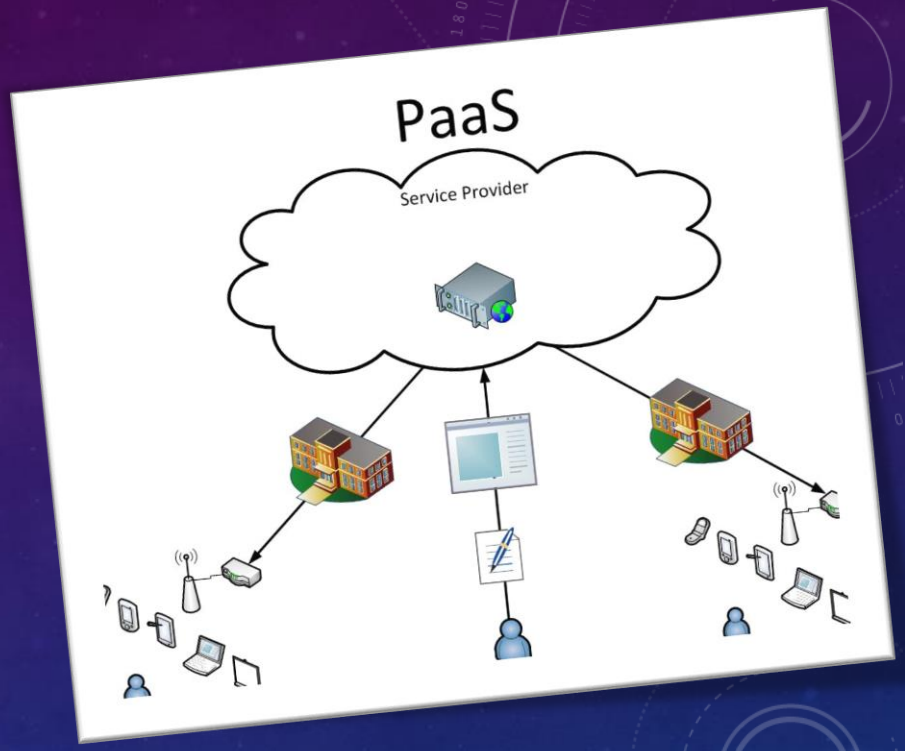
Landscape of cloud computing:



SAAS

- Software as a service.
- Renting application functionali[illegible]er.
- Global accessibility.

PAAS



- Platform as a service.
- providing a platform in the cloud which application can be developed and execute.

IAAS

- Infrastructure as a service

  used to support operations including:

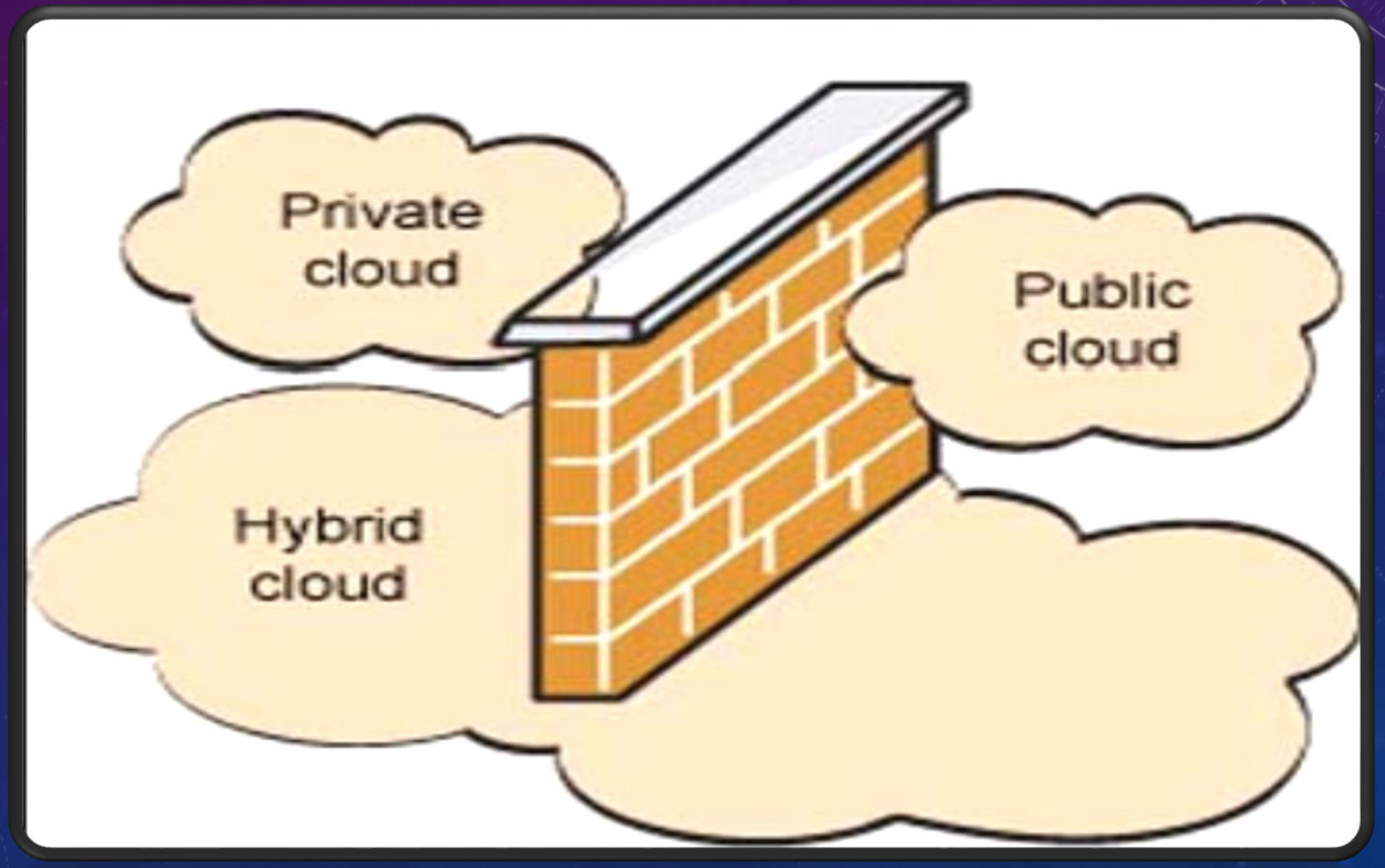
  - storage.
  - hardware servers.
  - networking components.

- Service provider responsible

  - running.
  - maintaining.

- Dynamic scaling.

Cloud Computing Types:



PUBLIC CLOUD COMPUTING:

- Is one in which the services and infrastructure are provided off-site over the Internet.

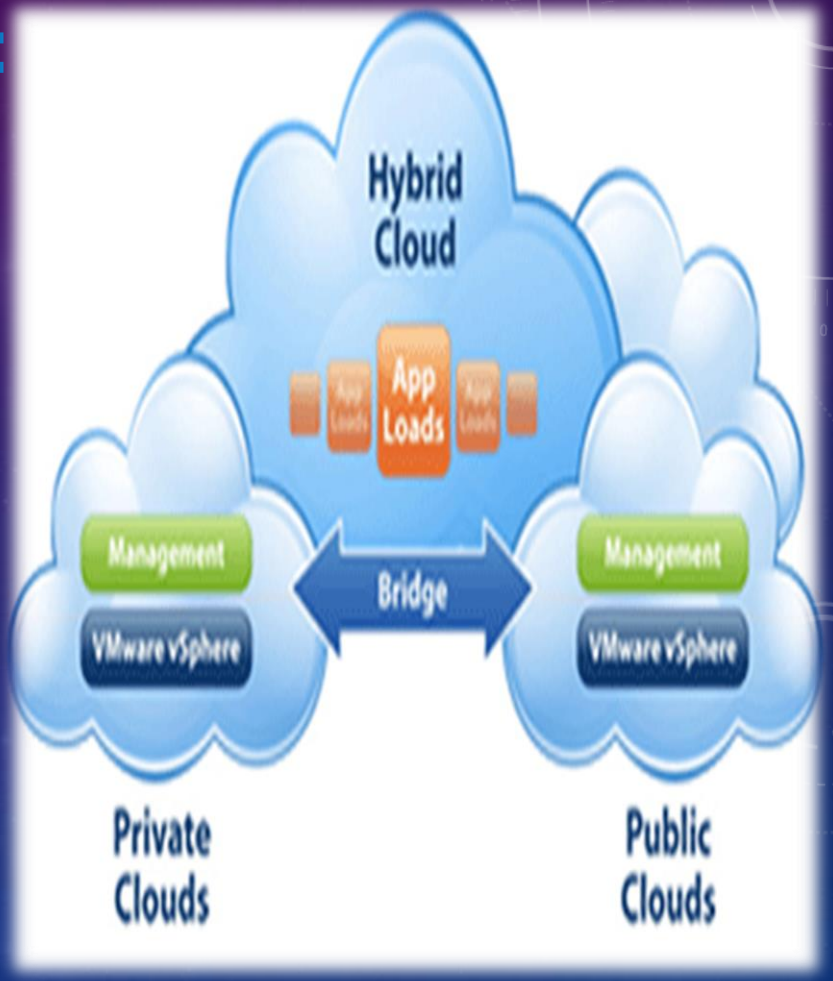
- Offer the greatest level of efficiency in shared resources.

PRIVATE CLOUD COMPUTING:

- Is one in which the services and infrastructure are maintained on a private network.
- Greatest level of security and control.
- Reduces the cost savings.

HYBRID CLOUDING:

- Includes a variety of public and private options with multiple providers.
- Access to client, partner network, and third party.



CHARACTERISTICS OF CLOUD COMPUTING:

- Security.
- Agility.
- Reliability.
- Performance.
- Accessibility.
- Cost.
- Scalability.
- Maintenance.
- Device and location independence.

WHY MOVING TOWARDS CLOUD COMPUTING?

- Easy and inexpensive.
- Scalability to meet needs.
- No wasted resources because you pay for what you use.
- High efficiency .

CHALLENGES OF CLOUD:

- **Why people avoid cloud?**

  - Data lossless.

  - Internet disconnection.

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Thank you

Q’s and A’s